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10/702,090	11/06/2003	Kazuyuki Kudo	1767-120	8213

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EXAMINER

PARRIES, DRU M

ART UNIT PAPER NUMBER

2836

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed August 16, 2006 have been fully considered but they are not persuasive. Regarding the amended claim and the Gale reference, Gale teaches controlling the operation of the first and second power supply circuits (14 and 20) to keep their voltage at a predetermined level (i.e. 42 volts) by recharging the batteries after each use (Col. 3, line 53 – Col. 4, line 3). Also, regarding the Matsudaira reference, he teaches three converters all controlled to output the same voltage (Col. 5, lines 2-13).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Gale et al. (6,930,404). Gale teaches a first and second electric power supply circuit (14 and 20; Fig. 1). He also teaches a controlling device (41) which controls operations of both power supply circuits to keep each power supply circuit voltage at a predetermined value (42 Volts) (Col. 3, line 53 – Col. 4, line 3). He also teaches each of the power supply circuits functioning as part of audio equipment. (Col. 2, lines 36-49)

4. Claims 1, 5, 10-13, and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Maple et al. (6,437,462). Maple teaches a first and second power supply circuits (20 and 30)

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including first and second comparators (111 and 110, respectively) and first and second control circuits (113 and 114, respectively). The first comparator (111) compares the output of the first supply circuit with a reference voltage, and the first control circuit (113) controls the output of the first power supply circuit based on the first comparator (Col. 4, lines 36-49). He also teaches the second comparator (110) comparing the output voltage of the first power supply (601) with the output voltage of the second power supply (602), and the second control circuit (114) controls the output of the second power supply circuit based on the second comparator to be equal to the output of the first power supply circuit (Col. 6, lines 9-23). The second comparator also will detect whether power is supplied to the second power supply line, based on the input to the comparator. The first and second power supply circuits are connected to the same battery (12 and/or 14). The first and second power supply circuits comprise DC-DC converter circuits, and the control circuits comprise pulse control circuits (i.e. PWM). Also, regarding claim 17, it is inherent that when no power is supplied to the second power supply line, that no electric charge will flow into the second power supply line, from any source (i.e. second power supply circuit).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsudaira et al. (6,177,739) and Shirai et al. (6,328,394). Matsudaira teaches a first and second power supply circuit (lines with 622 and 623) for supplying power to an image forming

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apparatus and a controller (66) for controlling their operation at approximately the same voltage. He also teaches each supply circuit having a DC-DC converter (622 and 623). Matsudaira fails to teach turning on and off the two supply circuits depending on the state of the second circuit. Shirai teaches an image forming apparatus with dual supplies. He teaches a detection device (222) detecting the on-off state of the second supply line (power to image recording apparatus) and in turn detecting the necessity of providing power on the first and second supply lines. He goes on to teach turning on both supply circuits when the second supply line is detected to have on-status and turning both circuits off when the second supply line is detected to have off-status. (Col. 8, lines 17-59; Col. 9, lines 4-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this method of turning on/off the supply circuits into Matsudaira's invention because operability is improved.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsudaira et al. (6,177,739) and Shirai et al. (6,328,394) as applied to claims 1 and 3 above, and further in view of Giannopoulos (6,504,267). Matsudaira and Shirai teach a dual power supply circuit as described above. Neither of these references teach a backflow-inhibiting diode. Giannopoulos teaches a backflow-inhibiting diode (above RS₂) on a second supply line (Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this diode onto the second supply line of Matsudaira's invention so that no stray current will flow and therefore prevent any misinterpretation of the off-status on the second supply line.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maple et al. (6,437,462) as applied to claim 1 above, and further in view of Hazelton et al. (6,720,862). Maple teaches a power supply system for a vehicle as described above. Maple fails to teach the

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specific loads that are supplied by each power supply circuit. Hazelton teaches a first supply line (line to 32) being a backup line in a vehicle and the second line (line to 30) being an accessory line in the vehicle both being supplied from one battery (12). It would have been obvious to one of ordinary skill in the art at the time of the invention to supply power to the loads as described in Hazelton's invention since Maple was silent as to how and what loads were being powered and Hazelton teaches a method known in the art.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maple et al. (6,437,462) as applied to claim 10 above, and further in view of Sato et al. (4,323,787). Maple teaches a power supply system for a vehicle as described above. Maple fails to teach the specific loads that are supplied by each power supply circuit. Sato teaches loads powered by a vehicle power supply including an audio amplifier (preamble to claim 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to have Maple's system supplying power to an audio amplifier since it is known in the art to have car power supply systems powering audio amplifiers.

Allowable Subject Matter

10. Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: the references of record, either alone, or in combination, do not teach or suggest at least the limitations of: the outputs of the first and second power supplies, supplying the power supply inputs of two amplifiers, nor was there motivation to combine that limitation into the existing prior art.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on M-Th from 9:00am to 6:00pm. The examiner can also be reached on alternate Fridays.

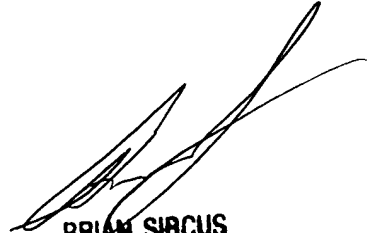
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

10-23-2006



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